

REMARKS

Claims 1-4 and 6-28 are pending in the present application and all of the claims were rejected in the non-final Office Action mailed on September 1, 2010. Claim 1 has been amended to delete the limitations that the optically active structures include a “purely reflective metallised zone” and a “metallised zone of a transparent region” in order to more clearly define what the Applicants believe to be their invention.

The Applicants respond to the issues raised in the non-final Office Action mailed on September 1, 2010 as follows:

Claim Rejections – 35 USC § 102

Claims 1-4, 6-10 and 12-28 have been rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 6,030,691 to Burchard et al. (“Burchard”). Burchard discloses an antifalsification paper having a security element in the form of a thread or band. (Abstract.) In rejecting claim 1, the Office Action states at page 4, lines 11-15 that:

Burchard teaches that the optically active elements are metallized *optically active structures*, and that the structures can comprise such elements as purely reflective metallized zones, *diffraction lines, holographic zones*, demetallized zones of a metallized area, a zone bearing printing, and a metallized zone of a transparent region.

(Emphasis added.)

Claim 1 has been amended to require that “at least some of said optically active structures comprise one or more of the following safeguard elements: “-- zone comprising diffraction lines,

--zone comprising a diffraction mat, and -- zone comprising a hologram." Diffraction lines, diffraction mats and holograms are all well known three-dimensional structures. The Applicants respectfully submit that Burchard neither teaches nor suggests the three-dimensional, optically active structures required by the claims. Instead, Burchard teaches two-dimensional structures that "creat[e] the impression of three-dimensionality." Col. 6, lines 29-30. Burchard explains how this is accomplished at col. 6, lines 37-44 as follows:

The special linear form of gaps 22 corresponding to the contours of a shadow *creates the impression* that the character has a certain depth. Such *quasi three-dimensional characters* or patterns can be produced both by the described demetalizing method and by printing technology. The *three-dimensional impression* can of course also be created inversely for characters represented in positive print.

(Emphasis added.)

One of ordinary skill in the art would understand that the phrases: "creates the impression," "quasi three-dimensional" and "three-dimensional impression" refer to two-dimensional structures that create the impression of a three-dimensional structure. Accordingly, Burchard does not disclose the three-dimensional structures required by amended claim 1 and, therefore, does not anticipate claim 1 or claims 2-4, 6-10 and 12-28, which depend on claim 1.

Claim Rejections – 35 USC § 103

Claim 11 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Burchard as applied to claim 10 and further in view of U.S. Patent Application Pub. No. US 2003/0058491 to Holmes ("Holmes"), which teaches an optically variable security device. Claim 11 requires that the "optically active elements comprise a *diffraction mat* integrated into a *diffraction metallised region*." Paragraph [0118] of the specification defines "diffraction mat" as follows:

The term 'diffraction mat' is defined as being a zone diffracting the light in accordance with a single wavelength in all directions in space. Such a diffraction mat thus appears to an observer as being of the same appearance, irrespective of the angle of illumination and/or observation of the mat.

Thus, claim 11 requires two diffractive structures. Holmes has been cited in paragraph 10 of the Office Action as teaching two such diffractive structures--a diffraction based optically variable device that can include a structure that exhibits a first optically variable effect and a second structure that exhibits a second optically variable effect. The Office Action states at the top of page 7 that:

Holmes, which is drawn to an optically variable security device, teaches that an optically variable security device can incorporate diffraction based optically variable devices, and that the device can include a *structure that exhibits a first optically variable effect* and a *second structure* either on or in the first structure that exhibits a second optically variable effect (see ¶¶ [0003]-[0007]).

(Emphasis added.)

The Applicants respectfully submit that this finding misconstrues the teachings of Holmes. Holmes teaches *only one diffractive structure*. The second optically variable device is not a diffractive device. This is clearly stated in paragraph [0004]:

[0004] In accordance with a first aspect of the present invention, an optically variable security device comprises *a thin film reflection filter structure*, which exhibits a first optically variable effect; and *a relief structure* on or in the thin film reflection filter structure, which exhibits a second optically variable effect.

(Emphasis added.)

Holmes goes on to explain that the thin film reflective filter structures and the relief structures are "*two different technologies*" and states in paragraphs [0006] and [0007] that:

[0006] We have devised a new security device which has a very characteristic appearance, and by virtue of combining ***two different technologies*** is inherently difficult to counterfeit.

[0007] Now it should be appreciated that although ***thin film iridescence and diffraction*** are both interference phenomena, the former manifests this phenomena through amplitude division whereas the latter depends on the effect of wavefront division.

(Emphasis added.)

Holmes clearly teaches that optically variable effects produced by ***thin film devices*** are different than the optically variable effects produced by ***diffractive structures***, such as holograms.

In paragraph [0003], Holmes states that:

The ***optically variable effects produced by thin film devices***, although attractive and distinctive, ***are fairly modest when compared to holograms*** and other diffraction based optically variable devices (DOVID's). . . Typically at a given viewing angle the observer will see the device replay one colour or hue, while tilting the device substantially within the plane of reflection will either increase or decrease the optical path length travelled by the light rays as they are reflected within the layers thereby causing the device to undergo a colour shift to a contrastingly different colour.

(Emphasis added.)

Thus, Holmes discloses that thin film devices are substantially different from diffractive structures. Holmes teaches that the thin film devices produce optically variable effects due to the variation in the optical path through multiple layers of film. Holmes teaches that, in contrast to thin film devices, diffractive devices, such as holograms, use relief structures to produce optically variable effects.

Claim 11 requires two diffraction structures--both a diffraction mat and a diffractive metallised region. Holmes only teaches one diffraction structure and produces a second optically

variable effect using a thin film device. Holmes clearly teaches that such thin film devices are not diffractive structures. Therefore, Holmes does not overcome the deficiencies in Burchard that are discussed above and claim 11 is not obvious in view of the combination of Burchard and Holmes. Accordingly, the Applicants respectively request that the rejection of claim 11 be withdrawn.

Conclusion

The Applicants submit that the amendments and arguments made herein have distinguished the cited prior art from the amended claims and respectfully request that the rejections be withdrawn and the claims be allowed.

If there are any further concerns regarding the above-identified application, it is respectfully requested that the Examiner contact the Applicants' attorney at the telephone number provided below.

Respectfully submitted,

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